South Texas Weather Journal

NWS Corpus Christi, TX 2009 Summer Edition

2009 HURRICANE OUTLOOK - PREPAREDNESS ENCOURAGED

By John Metz — Warning Coordination Meteorologist

The 2009 Atlantic hurricane season outlook is an official product of the National Oceanic and Atmospheric Administration (NOAA) Climate Prediction Center (CPC), and is produced in collaboration with scientists from the National Hurricane Center (NHC) and Hurricane Research Division (HRD). The Atlantic hurricane region includes the North Atlantic Ocean, Caribbean Sea, and Gulf of Mexico.

NOAA's 2009 Atlantic Hurricane Season Outlook calls for a 50% chance of a near-normal season. The outlook also indicates a 25% chance of an above-normal season and a 25% chance of a below-normal season. In a normal season an average 11 named storms, 6 hurricanes, and 2 major hurricanes develops in the Atlantic Hurricane region. For 2009, there is a 70% chance that 9-14 named storms will develop, with 4-7 becoming hurricanes, and 1-3 of those becoming major hurricanes.

This outlook reflects the ongoing conditions associated

with the high-activity era that began in 1995, combined with the uncertainty regarding the possible development of El Niño and/or whether cooler-than average sea surface temperatures (SSTs) will persist in the eastern

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Inside this issue:

WHEN IS THIS DROUGHT GOING TO END?!

By Greg Wilk— Senior Forecaster / Hydrology Program Leader

The South Texas Drought of 2008 and 2009 will go down as one of the most significant dry periods in decades, as most locations have had below normal monthly rainfall since September 2008. For example, Victoria Regional Airport (which is the official climate station for the city of Victoria) has rainfall deficits in excess of 20 inches since last September, while deficits for Corpus Christi have been over 15 inches. Because of the large deficits incurred over the past several months, portions of South Texas are experiencing exceptional drought conditions (to view the latest Drought Monitor product, see http://www.drought.unl.edu/dm/monitor.html).

Some may be under the false impression that several inches of rain over a few days, or one or two consecutive months of above normal rainfall will bring a drought to an end. However, just as drought conditions often take several months to develop, it normally will take

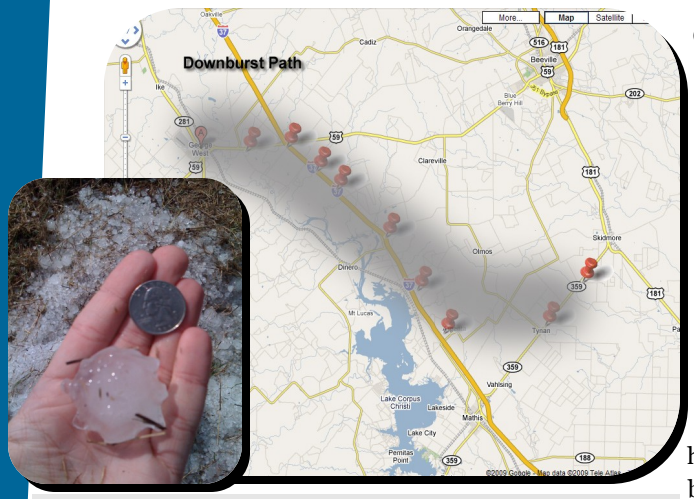
(Continued on page 3)

A LOOK BACK

South Texas Hit with Severe Weather, Despite Ongoing Drought

By Jason Runyen—Forecaster / Storm Data Program Leader

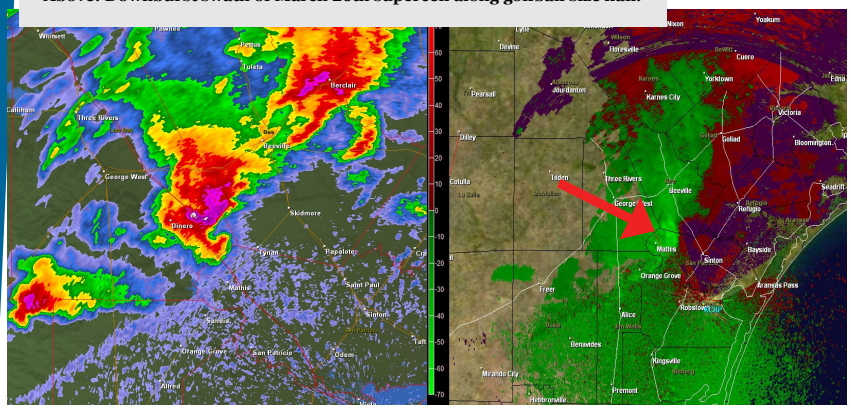
Despite historical drought conditions occurring across South Texas, the region did experience several rounds of severe weather during the Spring.



Above: Downburst swath of March 26th supercell along golfball size hail.

One of the bigger severe weather episodes occurred on March 26th when scattered thunderstorms affected portions of South Texas. A few of the storms became severe and produced damaging downburst winds, large hail, and frequent lightning. The worst damage was associated with a supercell thunderstorm that developed over central Live Oak County near George West. The supercell moved east-southeast across the extreme southern portion of Bee County into the northern portions of San Patricio County before weakening.

This storm produced a 5 to 10 mile swath of damage mainly due to high winds. A couple of semi-trucks were turned over. Several power poles were snapped or leaned over along with highway signs being blown over. The winds were estimated to be 60 to 70 mph with gusts as high as 80 mph. The storm also produced large hail ranging in from quarter to golf ball size.



Reflectivity data, shown on the left, indicated the mesocyclone, an area of rotation within the supercell thunderstorm, was strong enough to produce a tornado as a "hook" shaped echo was evident just to the north of Lake Corpus Christi. Although no tornado was ever officially confirmed, the image on the right, showing velocity data, does indicate a large area of damaging straight-line winds. Note the brighter green colors just east of Tynan, indicating damaging straight-line winds. For more information on this event visit www.srh.noaa.gov/crp/stories/Mar2609/default.html

Below: Locations of hail reports on April 17th along with NWS Warnings Polygons

The next severe weather episode this past Spring occurred on April 17th, affecting the Rio Grande Plains and Brush Country of South Texas. Golfball size hail occurred with these storms in rural McMullen County as well as the city of Laredo in Webb County. Nickle to quarter size hail was observed in Duval and Jim Wells County, including the city of Alice.

On April 27th severe weather impacted the northern Coastal Bend and Victoria Crossroads. 58 mph winds were recorded at the Victoria Regional Airport and lightning struck the Victoria 911 center, forcing dispatchers to use a backup system. Austwell recorded 3.91 inches of rainfall from these storms on the 27th.

The Coastal Bend experienced two days of severe weather on May 23rd and 24th. This included a tornado in Ben Bolt (Jim Wells County) and straight-line wind damage in St. Paul (San Patricio County). A NWS team surveyed the Ben

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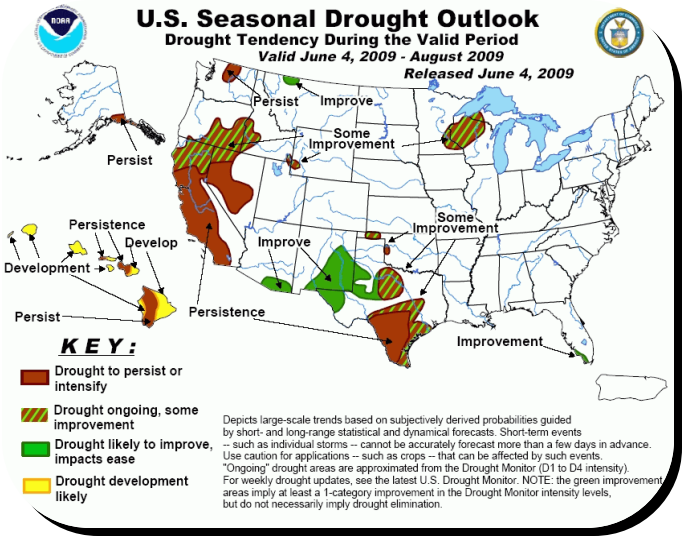
A LOOK AHEAD

(Continued from page 1)

several months for a drought to end. In most instances, several months of above normal rainfall will be needed to make up for several months of below normal rainfall. Also, excessive rainfall over a very short time will not always be able to percolate deep into the soil (and replenish the lack of moisture), since much of the precipitation will run off into rivers and streams.

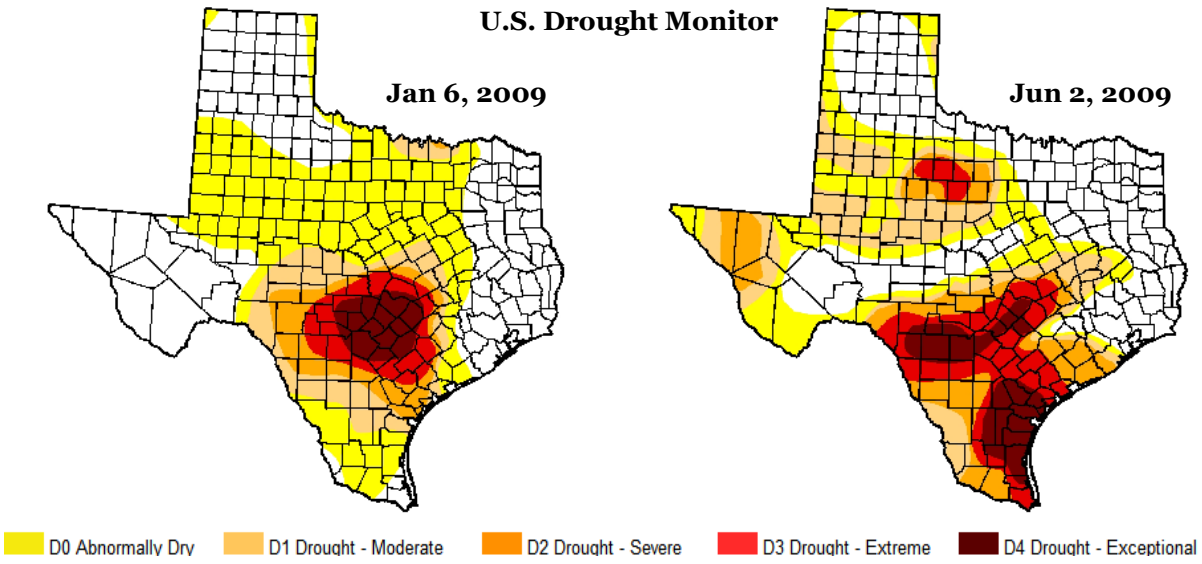
Obviously, there can be exceptions to this general rule. For example, a very slow moving tropical or subtropical system can dump copious amounts of rainfall in a very short time. If water is allowed to remain on the surface for several days and not run off, then deep soil moisture can be replenished and droughts can end more rapidly than usual. This recently happened in Florida, where a slow-moving sub tropical system provided over 15 inches of rainfall to much of the southern half of the state, relieving much of the area from the severe to extreme drought conditions it was experiencing. However, it should be noted that, despite all of this rainfall, some portions of South Florida are still in drought.

So, what is the outlook for the drought over South Texas? The latest Drought Outlook (http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html) indicates that, although the drought is expected to continue, some relief in drought conditions are expected by the end of August. This outlook is based on the forecast that near normal rainfall will most likely



occur over South Texas from now through the end of August. Thus, while near normal rainfall will be able to bring some drought relief, it will not be sufficient to eradicate the large rainfall deficits which have been observed over the last several months.

You can keep track of the latest drought conditions and forecasts for our area by going to our home page (http://www.srh.noaa.gov/crp/) and clicking on the "Drought Info" icon near the bottom of the page. There, you can read the latest Drought Information Statement for South Texas, and access the latest Drought Monitor and Drought Outlook products. Our drought page also provides several other links which can provide you additional information on the drought not only in Texas but all over the United States.



SAFETY SEAGULL

Summer Death Traps

By John Metz—Warning Coordination Meteorologist

Vehicles can be death traps

Each year an average of 38 infants and children die in the United States from hyperthermia after being left in vehicles and every one of these deaths could have been prevented. Did you know that the temperature inside your vehicle can rise nearly 30 degrees in just 20 minutes. In the summer time that means the temperature can soar to over 100 degrees in just minutes. Children accidently left in these conditions can quickly experience hyperthermia and death.

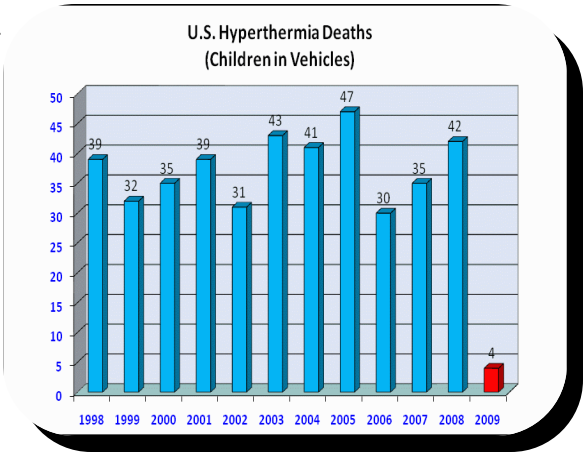
In the summer time temperatures inside a vehicle can soar well over 100 degrees in just minutes

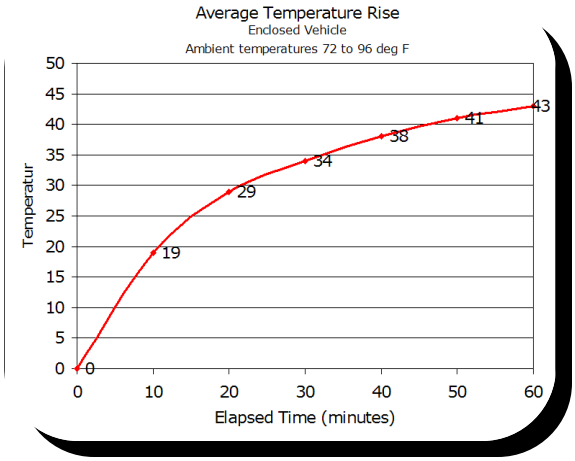
How can we avoid such a tragic loss of life?

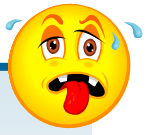
Be aware that the suns shortwave radiation can easily penetrate a vehicle's windows and heat the objects inside such as the seats and dashboard. The heated objects then produce long wave radiation which is very efficient at warming the air trapped inside the vehicle. Darker colors absorb more heat, thus speeding up the heating process. In fact a dark dashboard or seat can easily reach temperatures of 180 to over 200 degrees F.

Safety Recommendations:

- NEVER LEAVE A CHILD UNATTENDED IN A VEHICLE. NOT EVEN FOR A MINUTE !
- Be sure that all occupants leave the vehicle when unloading. Don't overlook sleeping babies.
- Always lock your car and ensure children do not have access to keys or remote entry devices. If a child is missing, check the car first, including the trunk. Teach your children that vehicles are never to be used as a play area.
- Keep a stuffed animal in the car seat and when the child is put in the seat place the animal in the front with the driver.
- Or place your purse or briefcase in the back seat as a reminder that you have your child in the car.







The temperatures inside your vehicle can rise nearly 30 degrees in just 20 minutes

FEATURED NWS PRODUCTS

New Briefing Service Coming July 1st!

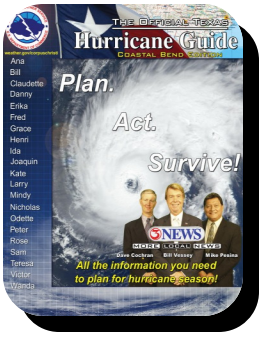
By Jim Reynolds—Forecaster / Multimedia-Graphicast Program Leader

Beginning on Wednesday, July 1 the National Weather Service in Corpus Christi will start to make a daily "multimedia briefing" available to the public. This briefing will incorporate a mix of graphics and audio to provide information on notable weather that is expected across south Texas within a seven day time frame. The information in this briefing will be updated by 10 am each day. This multimedia briefing can be accessed from the Corpus Christi National Weather Service web page by clicking on the icon shown to the right:

www.weather.gov/corpuschristi

2009 Official Texas Hurricane Guide Now Available!

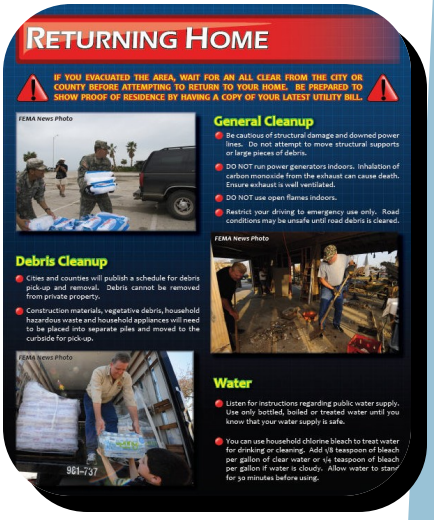
By Scott Cordero—Meteorologist-in-Charge



The statement we often hear, "It is not a matter of if, but when the next storm will make landfall and change our community forever" was realized this past hurricane season along the upper Texas coast. Texans need to be prepared this and every year for the hazards of tropical storms and hurricanes. For this reason, the National Weather Service has produced an updated 2009 Official Texas Hurricane Guide. This guide will serve as your roadmap for action before and during a hurricane, and will also act as an instructional guide for recovery, continuity and resiliency after the storm passes.

We invite you to view this important 28 page guide by accessing the Corpus Christi National Weather Service web page and clicking on the icon shown to the left:

www.weather.gov/corpuschristi



Above: Sample pages from the 2009 Official Texas Hurricane Guide—Coastal Bend Edition.

DID YOU KNOW? - HURRICANE EDITION

Force of Wind in a Hurricane

- 25 mph wind generates 50 lbs of weight on 4x8 sheet plywood.
- 75 mph wind generates 450 lbs of weight on 4x 8 sheet plywood.
- 125 mph wind increases the weight to 1250 lbs. Causes FAILURE!

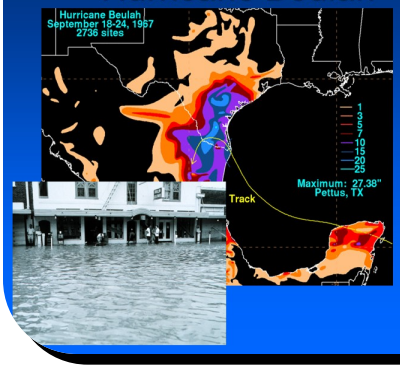
Storm Surge

- Storm surge has historically been the deadliest cause associated with hurricanes.
- One cubic yard of storm surge weighs 1700 pounds.

Hurricane Tornadoes

- Hurricane spawned Tornadoes typically occur during daylight hours and in the northeast quadrant of northward moving Hurricanes

Inland Flooding
Hurricane Beulah - 1967



- 30 Inches of Rainfall occurred in Live Oak County
- 10 Fatalities & Record Flooding on Nueces River

COOP CORNER

2009 Coop Rainfall Totals to Date (Jan — May)

Alice Intl Arpt	1.86”
Aransas Wildlife Refuge	8.80”
Beeville 5 NE	4.98”
Benavides #2	1.98”
Bishop	2.09”
Calliham	6.01”
Choke Canyon Dam	3.86”
Coleto Creek Reservoir	6.04”
Corpus Christi Intl Arpt	2.46”
Cotulla	6.83”
Cross	4.92”
Encinal	2.28”
Fowlerton	3.73”

George West 2 SSW	3.54”
Goliad	10.37”
Kingsville	2.01”
Laredo #2	4.57”
Loma Alta	5.40”
Los Angeles 4 WSW	3.34”
Mathis 4 SSW	3.54”
Padre Island Seashore	2.89”
Point Comfort	11.00”
Port Aransas	3.38”
Port Lavaca	12.24”
Port O’Connor	6.27”
Refugio 3 SW	5.78”

Refugio 2 NW	7.68”
Robstown	2.14”
Rockport	3.80”
Sinton	3.63”
Three Rivers 8 NE	6.83”
Tilden 10 S	
Tilden 4 SSE	6.18”
Victoria Fire Dept #5	8.58”
Victoria Regional Arpt	5.36”
Welder Wildlife Refuge	7.14”
Whitsett	4.73”

STAFF SPOTLIGHT

NWS Corpus Christi Welcomes Newest SCEP

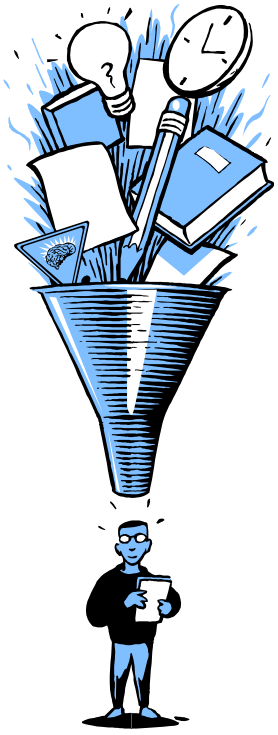
With the departure of Beth Tilley and Amanda Fanning as last year's students in the Student Career Employment Program (SCEP), NWS Corpus Christi welcomes its newest member of the program, Amanda Boudreaux.

Amanda was born and raised in Highland Village, TX. She played soccer for 13 years and has been very active in her church all her life. Amanda was initially drawn to meteorology by watching storms roll across the Dallas/Ft. Worth area. She knew from a young age that she wanted to be a meteorologist. Ever since she was four she has been giving "weather reports" to her family. Amanda graduated from Marcus High School in 2007 and is currently a first generation Aggie at Texas A&M University, majoring in meteorology. Much to her delight, she plans on graduating early from Texas A&M in December 2010. Amanda writes, "I am very excited to be in the Student Career Employment Program at NWS in Corpus Christi for the next two summers! Thanks and GIG EM!"

Amanda began her the program here at NWS Corpus Christi on June 8th, and will be working on the Public Service and Upper Air desks. You may likely get the opportunity to speak to Amanda on the phone over the summer! Welcome Amanda to NWS Corpus Christi and South Texas!

College Students Gain Valuable Experience through NWS Student Program

By Amanda Boudreaux — NWS Corpus Christi SCEP Student



The Student Career Employment Program (SCEP) is a unique program that allows students to experience life as a National Weather Service (NWS) employee. This program gives students the ability to work with experts at a Weather Forecasting Office (WFO). There are several requirements a student must meet in order to be a SCEP. First, the student must be enrolled in an accredited college pursuing meteorology, computer science, information technology, math, physics, or geography. Once accepted to the SCEP program, a student must work 640 hours prior to completing their degree.

Students receive many benefits from participating in SCEP. First of all, it allows the students to get hands on experience in meteorology, as well as helping them narrow down a particular field of interest within their major. While in SCEP, students learn how to do upper air observations, forecasting, as well as learning to speak the language of the NWS, which can be tricky at times! Students are also exposed to the many different forecasting tools and products of the National Weather Service. This program allows a student to see how the book knowledge they have acquired in school applies to life outside the classroom. The student is encouraged to begin a research project of some kind and work on it throughout their stay as a SCEP. One of the greatest benefits of SCEP is the fact that upon graduation the student may be placed non-competitively at a WFO as a meteorology intern. This program is one of the best ways to get your foot in the door at the National Weather Service.

For more information on this SCEP program and the Weather Forecast Office in Corpus Christi, you can call the Meteorologist In Charge, Scott Cordero at (361) 289-0898 or send him an email at Scott.Cordero@noaa.gov.

SCIENCE SCOOP

ENSO Update: Warming waters in the central Pacific equatorial region but cooler in the Atlantic Basin

By Alex Tardy—Science and Operations Officer

Neutral or cooler than average sea surface temperatures have been observed in the equatorial region of the central Pacific Ocean since early 2007. This has led to the most recent period of La Nina conditions (cooler than average) during part of 2008 and 2009. The persistent conditions have likely contributed to the exceptional drought that has plagued South Texas during the past 12 to 18 months. However, during the Spring the ocean temperatures have been steadily warming and we are now in what is considered a El Nino Southern Oscillation (ENSO) neutral state across the central Pacific Ocean (see Figure 1). In addition to the warming, subsurface water temperatures (down to 1000 feet below sea level) are warm. Therefore, the potential for continued warming of the central Pacific is possible and most of the numerical forecast models are predicting the development of El Nino (warmer than normal). Despite these predictions the statistical models are not predicting El Nino and the numerical weather models have had a tendency to change the ocean temperatures too rapidly. The official forecast from the Climate Prediction Center is for continued slow warming into the summer months and possible El Nino conditions late in 2009.

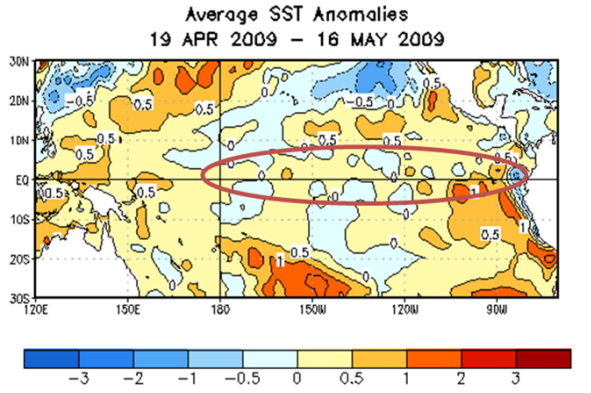


Figure 1: SST departure from normal (anomalies) in the central Pacific Ocean.

The state and strength of ENSO can affect the tropical season and this condition is one of the factors which were considered for the 2009 tropical forecast. However, not since the strong El Nino which developed in 1997 has ENSO greatly affected the number of tropical systems. Furthermore, the major Hurricanes (category 3 or higher) to directly hit the Coastal Bend were Carla (1961) and Beulah (1967) which occurred during ENSO neutral conditions during June to September. The last major hurricane was Celia (1970) slammed into the region during weak La Nina water. Hurricane Allen (1980) tracked south of the Coastal Bend but occurred during ENSO neutral conditions. El Nino's effect on the atmosphere is for increased wind shear (stronger winds) in the Gulf of Mexico, however we have been in an active tropical period and active African monsoon system since 1995. There is typically a delay between changes in the sea surface temperatures and the atmospheric patterns (coupling). Therefore, forecasters have also considered the cooler than average sea surface temperatures in the Atlantic Basin (see Figure 2) and the resultant southward shift to the tropical zone or the African monsoon (where many tropical cyclones first develop).

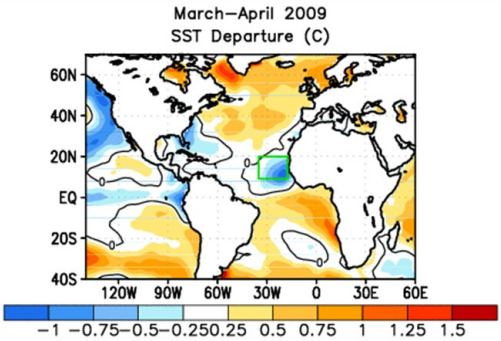


Figure 2: Cooler than average SSTs in March and April 2009 (green square is the main source region for the African monsoon).

This is the first time since around 2000 to have cooler temperatures in the Tropical Atlantic (see Figure 3). These are some of the reasons the tropical forecast remains a challenge. Please refer to the official forecast for details on this year's tropical forecast found in this newsletter.

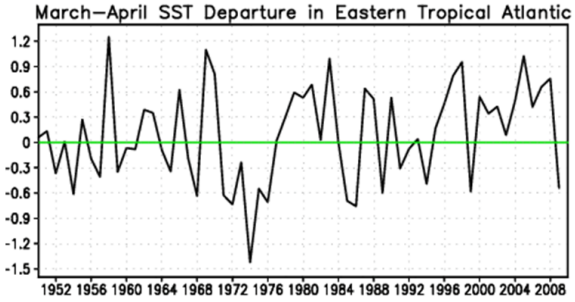


Figure 3: Time series showing the departure from average of SSTs in the eastern Tropical Atlantic.

FIRE WEATHER HOT SPOT

Drought and Critical Fire Weather Patterns Responsible for Another Active Fire Season

By Jason Runyen—Fire Weather Program Leader

The 2008 fire season in South Texas was historical, and intensifying drought conditions, from the Fall of 2008 through the Spring of 2009, led to another busy Winter and Spring fire season in 2009. Nearly 1,200 Wildfires burned almost 57,000 acres in South and Deep South Texas from January 1st through May 31st. There were 15 days from January through April where weather conditions reached Red Flag conditions. Red flag conditions occur when low relative humidity values combine with strong winds and dry fuels to produce a critical fire behavior danger.

Nearly 1,200 wildfires burned 57,000 acres in South and Deep South Texas from January through May 2009

In particular, an active fire weather pattern during the first week in April led to very low relative humidity and strong winds, sparking several wildfires, which included the Lagarto and Holiday Beach fires.

Above: Notable fire from April 2-6, 2009

The Lagarto fire was sparked by downed powerlines in the high winds on April 2nd, and burned 175 acres in the town of Lagarto near Lake Corpus Christi. 33 homes were destroyed along with 10 vehicles. Contributing to the fire that day was a dry, Pacific low pressure system, which produced very low relative values of 5-10% in combination with wind gusts to 50 mph., resulting in extreme fire behavior.

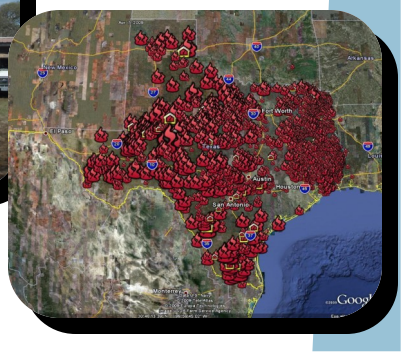
Above: Burn scar through Lagarto

The Holiday Beach fire burned 70 acres in the town of Holiday Beach, destroying one business, one home and several vehicles. Many other structures were threatened, however firefighters worked hard to save them.

Other notable fires over the Winter and Spring were the Sandia Complex Fire (which burned 2000 acres, destroyed one home and killed 25 cattle), the Salt Lake Fire near Rockport (which threatened 40 homes forcing evacuations), the Lee Road Fire again near Rockport (which threatened 90 homes and businesses and forced evacuations), the Riveria Beach Fire (which destroyed four homes in Riveria Beach), the Lake City Fire (which destroyed three homes in Lake City), and the Powderhorn Lake Fire (burning 3000 acres over three days).

Above: "Trading Post" in Holiday Beach destroyed by wildfire

Below: Texas 2008-2009 Fires



HURRICANE OUTLOOK CONTINUED

(Continued from page 1)

tropical Atlantic. If El Niño develops we could see fewer storms.

Dr Gerry Bell, Ph.D., one of the lead seasonal hurricane forecaster at NOAA's Climate Prediction Center states it best: "This outlook is a guide to the overall expected seasonal activity. However, the outlook is not just about the numbers, it's also about taking action. Prepare for each and every season regardless of the seasonal outlook. Even a near-or below-normal season can produce landfalling hurricanes, and it only takes one landfalling storm to make it a bad season."

Left: New NOAA administrator Jane Lubchenco and Rear Admiral Philip M. Kenul, director, NOAA Office of Marine and Aviation Operations in front of the P-3 Hurricane Hunter Aircraft.

SEVERE WEATHER RECAP CONTINUED

(Continued from page 2)

Bolt area and concluded that and EF-1 tornado touched down near the community of Green Acres. The tornado was 50 yards wide and traveled two tenths of a mile before lifting back up. One mobile home was completely destroyed while a roof was removed from another. Numerous large tree branches were broken along the path and a couple of trees were uprooted. Winds were estimated to be around 105 mph.

Above: Mobile home destroyed by EF-1 tornado near the town of Ben Bolt.

It was Laredo's turn again on the evening of May 25th as a right moving supercell dropped hail ranging from the size of pennies to golfballs.

Severe storms again impacted the Coastal Bend and Victoria Crossroads on May 27th, in the form of hail along with heavy rain. Flash flooding was reported in the city of Goliad. Between 4 and 6 inches of rainfall fell across Calhoun and northern Aransas Counties. Flooding was also reported in Port Lavaca. A lone storm across the Rio Grande Plains also impacted the city of Laredo late in the evening, producing flash flooding which required water rescues.

The final spring severe weather episode occurred in June 3rd. Several severe storms developed across the Coastal Bend, Victoria Crossroads and Brush Country, producing mainly hail. Golfball size hail was reported at the Aransas Wildlife Refuge, as well as in rural Live Oak County. Penny to quarter size hail occurred in the city of Victoria, and nickel size on the west side of Corpus Christi. There was also an EF-0 tornado which touched down in the town of Old San Patricio, producing winds 65 to 75 mph. Damage was confined mainly to trees.

Unfortunately there was one weather related fatality in South Texas during the Spring. Lightning struck and killed a man on the beach in Port Aransas on March 15th.

SOUTH TEXAS SNAPSHOTS

DO YOU HAVE ANY COOL SOUTH TEXAS WEATHER PHOTOS THAT YOU WOULD LIKE TO SHARE IN OUR NEXT NEWSLETTER? SEND THEM OUR WAY!

EMAIL PHOTOS TO JASON.RUNYEN@NOAA.GOV



Left: Lightning strike captured in the background of NWS Corpus Christi radar.
Center: Rainbow captured in the background of NWS Corpus Christi inflation building.
Right: Shelf cloud approaching the Corpus Christi International Airport. Photos taken by Forecaster Jason Runyen on May 23, 2009.



Left: Supercell off the coast of Port O'Connor taken from Corpus Christi on May 24, 2009. Photo by Intern Roger Gass.
Center: Supercell at sunset in Deep South Texas taken from Corpus Christi on May 24, 2009. Photo by Intern Roger Gass.
Right: Rainfoot captured spreading out beneath updraft on May 24, 2009. Photo taken in Bishop E.M. Joseph Carr.



Left: Funnel cloud captured in Victoria County on June 4, 2009.
Center: Rainbow captured over Seadrift Harbor on May 25, 2009. Photo by Carol Garriot.
Right: Sun setting through base of storm near the Corpus Christi Intl. Airport on May 22, 2009. Photo by Forecaster Jason Runyen.

www.weather.gov/corpuschristi

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Newsletter Comments & Suggestions:
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Above: Staff of the NWS Corpus Christi Weather Forecast Office

Pictured left to right: Front Row...Christina Barron, Jennifer Chase, Katie Roussy, Mike Gittinger, Greg Wilk, Alex Tardy, Larry Maifeld, Tawnya Evans, Mani Medrano. Back row:...Scott Cordero, Tim Tinsley, Richard Martinez, Bill Harrison, Joel Venneman, Tony Merriman, Jim Reynolds, John Metz, Jason Runyen, Alan del Castillo